

What Is Claimed Is:

1 1. A high-speed data transmission network system
2 comprising:

3 a plurality of subscriber premises transmitting a first
4 upstream signal on a first frequency band;

5 a central office or a remote terminal in communication with
6 said plurality of subscriber premises broadcasting a downstream signal to
7 each of said plurality of subscriber premises on a second frequency band,
8 which is higher in frequency than said first frequency band, and receiving
9 said first upstream signal;

10 said downstream signal comprising one or more subscriber
11 group signals and a plurality of subscriber specific signals; and

12 a controller providing each of said subscriber premises access
13 to one or more of said one or more subscriber group signals and to a
14 corresponding subscriber specific signal of said plurality of subscriber
15 specific signals;

*wherein a plurality of said one or more subscriber
group signals are each*

*allocatable
to said
plurality
of
subscriber
premises*

1 2. A high-speed data transmission network system as in
2 claim 1 wherein said central office or said remote terminal is adapted to
3 receive a second upstream signal from said plurality of subscriber premises
4 on a third frequency band, being higher in frequency than said first
5 frequency band and lower in frequency than said second frequency band.

1 3. A high-speed data transmission network system as in
2 claim 1 wherein said first upstream signal is a signal received from at least
3 one of the following communication devices a POTS device or a data
4 network device.

1 4. A high-speed data transmission network system as in claim
2 1 wherein said downstream signal is a signal transmitted only to data
3 network devices.

1 5. A high-speed data transmission network system as in
2 claim 1 wherein said first frequency band contains only upstream
3 information.

1 6. A high-speed data transmission network system as in
2 claim 1 wherein said first frequency band contains bi-directional
3 information between said central office and said plurality of subscriber
4 premises.

1 7. A high-speed data transmission network system as in
2 claim 6 wherein a downstream portion of said first frequency band is
3 assigned for communication between said central office and a single
4 subscriber premise of said plurality of subscriber premises and contains
5 access control for said downstream portion.

1 8. A high-speed data transmission network system as in
2 claim 1 wherein said downstream signal and said first upstream signal are
3 received by a single subscriber premises of said plurality of subscriber
4 premises through the use of a single twisted wire-pair.

1 9. A high-speed data transmission network system as in
2 claim 1 wherein each subscriber premises of said plurality of subscriber
3 premises is assigned a subscriber specific address or encryption.

1 10. A high-speed data transmission network system as in
2 claim 1 wherein said downstream signal and said first upstream signal are
3 transmitted using at least one of the following multiplexing techniques: a
4 time-multiplexing technique, a frequency multiplexing technique, or a
5 statistical multiplexing technique.

1 11. A high-speed data transmission network system
2 comprising:

3 a plurality of subscriber premises transmitting a first
4 upstream signal only on a first frequency band;

5 a central office in communication with said plurality of
6 subscriber premises broadcasting a downstream signal to each of said
7 plurality of subscriber premises only on a second frequency band, which
8 is higher in frequency than said first frequency band, and receiving said
9 first upstream signal;

10 said downstream signal comprising one or more subscriber
11 group signals and a plurality of subscriber specific signals; and

12 a controller providing each of said subscriber premises access
13 to one or more of said one or more subscriber group signals and to a
14 corresponding subscriber specific signal of said plurality of subscriber
15 specific signals through the utilization of subscriber group and subscriber
16 premise specific access codes or encryptions.

1 12. A high-speed data transmission network system as in
2 claim 11 wherein said central office is adapted to receive a second upstream
3 signal from said plurality of subscriber premises on a third frequency band,
4 being higher in frequency than said first frequency band and lower in
5 frequency than said second frequency band.

1 13. A high-speed data transmission network system as in
2 claim 11 wherein a downstream portion of said first frequency band is
3 assigned for communication between said central office and a single
4 subscriber premise of said plurality of subscriber premises and contains
5 access control for said downstream portion.

1 14. A high-speed data transmission network system as in
2 claim 11 wherein said downstream signal and said first upstream signal are
3 received by a single subscriber premises of said plurality of subscriber
4 premises through the use of a single twisted wire-pair.

1 15. A method of transmitting, receiving, and providing
2 access to information within a high-speed data transmission network
3 system comprising:

4 transmitting a first upstream signal on a first frequency band
5 to a central office from a plurality of subscriber premises;

6 broadcasting a downstream signal on a second frequency
7 band, which is higher in frequency than said first frequency band,
8 comprising one or more subscriber group signals and a plurality of
9 subscriber specific signals to each of said plurality of subscriber premises;
10 and

11 providing access to one or more of said one or more
12 subscriber group signals and to a corresponding subscriber specific signal
13 of said plurality of subscriber specific signals.

1 16. A method as in claim 15 further comprising altering a
2 portion of said downstream signal specifically intended for a single
3 subscriber premise according to subscriber specific characteristics.

1 17. A method as in claim 16 where in altering said
2 downstream signal comprises:

1 18. A method as in claim 15 further comprising altering a
2 portion of said downstream signal specifically intended for a single
3 subscriber group according to subscriber group specific characteristics.

1 19. A method as in claim 15 further comprising receiving
2 a second upstream signal, at said central office, from said plurality of
3 subscriber premises on a third frequency band, higher in frequency than
4 said first frequency band and lower in frequency than said second
5 frequency band.

1 20. A method of adjusting performance of transmitted
2 signals between a central office and a subscriber premise of a high-speed
3 data communication network system comprising:
4 transmitting training signals; *→ different type of training signals*
5 monitoring and reporting effects of said training signals; and *✓ via*
6 performing an adjustment to symbol phase *and power-*
7 spectral-density of a downstream signal for an appropriate transceiver.